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M E M O R A N D U M

DATE: April 8, 2014

TO: Rose Longoria, Yakama Nation Fisheries

FROM: Bob Dexter, RIDOLFI Inc.

SUBJECT: **Comments on the *Memorandum: Identification of Principal Threat Waste at the Portland Harbor Superfund Site***

The April 3, 2014 CDM draft memorandum provides a reasonable framework for identifying PTW in the sediments at PH. I have the follow comments and questions.

1. Source Material. Since the approach follows the guidance, why not simply state, or state first, that contaminated sediments are a source material according to the guidance?
2. Concentration Based Threshold. This threshold argument applies to human health risks from cancer, and based on an assumption that risks are linearly related to concentration, this threshold appears to have been translated to an across the board multiplier of 1,000 times the low PRG. The basic assumptions are not likely to apply for all substances for non-cancer risks in humans, or risks to ecological receptors. It is also not clear that the guidance suggests that a factor of 1,000 is applicable to all risks.
3. Recommended Approach; PTW Lines of Evidence.
    - NAPL: Should other forms of product releases, such as tar, be included as a line of evidence?
    - It would help if the memo explained the basis for using the saturation thresholds (Csats). Are they related to NAPL generation (as per the Michigan DEQ document), a concentration based threshold, or some other risk factor?
    - As noted above it would be helpful if the EPA guidance that was cited specified the 1,000 factor for all risks. If it does not, then more discussion of how that value is defensible would be helpful.
    - In the last paragraph, can you replace “may only need to meet one” with more specific language, such as “only needs to meet one”?
4. Observation of NAPL. It was not clear why the definitions of NAPL used in the memo followed the earlier agreements with Gasco, or whether consistent definitions of NAPL were applied to both sites. It would seem appropriate in the site-wide PTW identification to use a stringent and universal set of criteria.
5. Estimated Sediment Concentrations. It was not clear why the calculations from Michigan DEQ were selected. The source document indicates that the calculation is intended for a VOCs and non-saturated soils. The memo uses a slightly different form of the equation compared to the source document, but, because no clear definition of the “water filled porosity” term is provided, it was not possible to check the calculations. It was also not clear how a single Csat concentration was derived for sediments with varying bulk

density and fraction organic matter. Finally, since the chemicals, except for the VOCs, were also modeled in the Fate and Transport model, why not simply use a generalized version of the three-phase model from that approach, back-calculating from a porewater concentration at the solubility limit, to estimate the Csat? The latter approach should yield results consistent with other lines of evidence of sediment risk. (It would also be helpful to rewrite the equation to make it clear that the bracketed portion of the equation is not in the denominator.)

6. High Concentration Threshold. This section makes it clear that this memo applies to a limited set of chemicals. Can a rationale be provided as to why no other substances are being screened, e.g., risks from other chemicals are known to be low?
7. Reliably Containable. I suggest that this section simply reiterate that this factor will be determined during design. It is problematic conceptually to leave these very-high-concentration substances in the river, which are likely subject to many natural and human sources of future disturbance.
8. Overall, the memo could be improved by
    - Clarifying from the start what substances are being addressed (or "focused on").
    - Edit the text to eliminate as much as possible 'may be," "should be," or other non-specific language that do not provide clear statements.